McKinsey & Company

Electric Power & Natural Gas Practice

Transforming interactive voice response systems in utilities

Utilities are having difficulty implementing customer-centric IVR systems. However, a five-step transformation approach can improve customer experience and cut call-center costs.

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September 2020

The call center is a critical part of the utility organization. If an outage occurs or a wire goes down, for instance, customer-call volume can increase significantly, as callers want to resolve these issues quickly and efficiently. This call volume comes at a significant cost to utilities, however. In our experience, a typical utility (with two million customers) receives two million to three million calls annually, which can cost $20 million to $40 million. To cut call-center costs, utilities are investing in and deploying automated systems, specifically interactive voice response (IVR) systems.

Yet most utility IVR systems still have significant capability gaps and run inefficiently. Combined with poor feedback loops, these limitations make the IVR experience frustrating for customers—and increase the cost per call. Consider that only a handful of utilities offer self-service options for bill-inquiry calls in their IVR, yet these calls make up 7 to 10 percent of total call volume. In comparison, a typical telco has approximately 60 to 70 percent of its billing-related calls handled through self-service platforms. Having an efficient IVR system means more customers can resolve their issues via self-service, leaving call-center agents available to address larger issues, such as gas leaks.

To build a best-in-class IVR system, utilities can pursue a five-step transformation approach. Overall, undergoing such a transformation is not very expensive—especially when compared with revamping a website—and the financial impact of improving the system can be rapid. Recent experience finds that improving IVR-containment rates by 5 to 20 percent and improving authentication rates by 15 to 25 percent can reduce total call-center costs by 10 to 30 percent in just three to six months.

Where are utilities in their IVR journey?

Utilities' IVRs are problematic for three reasons: limited self-service availability, legacy IVR systems with noncustomer-centric designs, and limited data analysis on call flows. Indeed, utilities often fail to consider which journeys should have self-service options and, within those journeys, what steps may be missing or superfluous. The billing and payment journey is a great candidate for self-service, as it is transactional by nature; customers can update their payment options or request a balance history without talking to a customer-service representative.

Legacy IVR systems often have little to no data-sharing capabilities across channels. As a result, customers are asked to repeat information (such as their account numbers) at multiple points throughout the billing journey. Furthermore, outdated systems generally rely on obsolete digital capabilities, resulting in poor predictive capabilities,[1] and the IVR design is often unwieldly, offering repetitive menu options delivered in a monotone.

Finally, without a feedback loop, utilities can conduct only limited analysis on IVR call flows, making it hard to identify strategic areas for improvement. One utility classified 25 to 35 percent of its inbound calls as billing related, but it had little additional information to further classify those calls—such as by whether they were about payment confirmations, excess charges, or balance inquiries. The menu design also made it difficult for customers to select the reasons for their calls. Only after pursuing its IVR transformation could the company analyze the different types of calls within that billing journey (Exhibit 1).

When done right, IVR provides seamless self-service. Consider once more the bill-inquiry journey: a customer receives a bill, notices a high charge, and then reaches out via the IVR for a resolution. The IVR system will recognize the customer's location and pull up relevant data; using advanced analytics, the system can verify whether the charge is correct or erroneous and, if necessary, send a detailed breakdown of charges to the customer. Critically, to support an omnichannel experience, this process must be consistent with the utility's web journeys.

[1] Predictive capabilities refer to when the IVR system offers suggestions as to what the customer may be calling about.

Exhibit 1

Major call reasons for billing and payments related calls.

Billing and payment breakdown, % of calls

Source: Electrical utility agent comments 2018

Five steps to transforming your interactive voice response system

To build a best-in-class IVR system, utilities must take a comprehensive five-step approach to IVR development: deciding what journey to focus on; identifying journey-level improvements; changing flow designs; addressing technical capabilities and system architecture; and developing, testing, and reporting.

1. Select an IVR journey

Utilities can maximize the impact of their transformation by using a combination of assessment and data analysis. Each utility's transformation will vary, depending on its current self-service maturity and available IVR technology. In some cases, utilities might need to completely revamp their system—though they should focus on only one journey at a time—while others might focus on improving one high-value journey, such as billing.

To identify the journeys best suited for self-service (and simultaneously improve self-service availability), utilities should look at several criteria: where there is sufficient opportunity (does the specific journey have a high average handle time or low current containment), feasibility of automating the resolution of call through IVR (for example, transactional calls), and where there is sufficient call volume. For instance, inbound calls about receiving and paying bills might account for 10 percent of annual call volume, have an average agent handle time of four to five minutes, and a high total annual cost, making billing a good IVR candidate (Exhibit 2).

Using analytics to review available data sources—such as agent desktop data, IVR system data, and customer-service software—can also help utilities better understand why a customer made a call and what existing journeys are more likely to result in a call directly to an agent.

When identifying self-service opportunities, utilities should also consider factors such as overall customer-adoption expectations, associated back-office costs, required IT and business contributions, and alignment with the individual customer's expectation. Technical feasibility is also critical: asking for a customer's address on IVR, for example, before ensuring that the IVR system can reconcile it against a database with correct customer address information will potentially lead to failure of the initiative.

Exhibit 2

Organizations should determine the journeys with the highest cost and high self-service potential.

High (50–75% reduction in agent calls) Medium (25–50% reduction in agent calls) Low (<25% reduction in agent calls)

Customer journeys	Common call types	Annual call volume,[1] thousands (% of total)	Average handle time,[1] minutes	Total cost,[1] $ million	Self-service potential
I sign up or move	Start service, move service to new location, stop service, deposit questions	360 (18)	8–10	4.0–5.8	
I receive and pay my bill	Bill payment, payment processing questions, general bill questions	200 (10)	4–5	1.1–1.6	
I encounter a billing issue	High-bill enquiries, meter validation, usage inquiries	380 (19)	7–8	3.2–4.3	
I have a payment issue	Payment plan sign-up, collections, low-income program enrollment	340 (17)	6–7	3.3–4.4	
I experience an outage	Outage reporting, outage updates, streetlight outages	560 (28)	4–5	3.1–4.5	
I request emergency services	Gas leaks, downed wires, sparks or fire reporting and updates	30 (2)	5–6	0.3–0.4	
I make account changes	Account enrollment, information update, account unlock	40 (2)	6–7	0.3–0.4	
I manage my energy use	Energy audits, product questions, appointment scheduling	80 (4)	7–8	0.8–1.0	

[1]For a typical utility, with two million calls per year.

2. Identify journey-level improvement opportunities

Once utilities decide which journey to optimize, they should find specific points within that journey that can be optimized.

To begin, utilities should build an advanced-analytics model to identify problem areas within their current call flows, such as high drop-off points—places where people leave the call. This analysis can provide better visibility into the overall call flow and help identify where change is needed and why. By accurately identifying the reasons for higher call volumes, low authentication rates, and repeat calls, utilities can create targeted solutions to mitigate customer contacts. Furthermore, advanced analytics can also make it easier to see the correlation between customer segments (based on demographics and products) and their engagement levels with IVR.

In the billing journey, for example, a customer may call the IVR system about a high bill and select the "inquire about my bill" option, but the system cannot provide the requested details. As a result, the customer may either hang up and call back or reach out to a customer-service representative. Utilities could resolve this issue by providing customers with a link to the web page through the IVR system and offering a detailed report of their bills.

For example, one utility used advanced analytics to determine that the data-collection process in its start-service journey was increasing agent handle times. In response, it invested in a self-service visual IVR system—a platform that collects information from inbound callers through a personalized journey using visual cues and prompts. The utility sent out a web form via text message to customers, prompting them to click on a link to the IVR system and fill out a form. These efforts led to about a 50 percent reduction of "start services" calls to agents, significantly reducing the time customers spent interacting with agents.

Using advanced analytics can also help utilities improve containment rates, enhance the customer experience, and cut operational costs.

3. Change up the design

Legacy IVR systems are generally built without the user experience in mind. And in many cases, the system has not been updated since it was first built, resulting in a poor customer-centric design.

Utilities can make their IVR systems more customer-friendly by, for example, changing the language used to communicate self-service options. They can also review call recordings and analyze the data to understand what words or phrases customers use when talking to an agent about a specific problem. By adjusting their voice options to reflect the same language back to customers, utilities can make the IVR system easier to navigate.

For utilities ready to invest more in their IVR systems, speech processing assisted by natural-language processing can help the system decipher customer-call intent and process requests and queries. An IVR system might use a human-sounding voice to ask a customer, "How can I help you?" In response, the customer may respond, "I need help with my bill," and be immediately routed to the correct resolution.

Reassessing whether certain steps, such as full authentication, are necessary in every context is another important design consideration. Utilities can also optimize the number of questions their IVR system asks customers, ensuring that those questions are relevant to the issues at hand. Enhanced data collection allows IVR systems to use up-to-date information to streamline call flow and better predict a customer's reason for calling.

Several utilities, for instance, require full authentication for every inbound call, regardless of the customer's issue. However, most customers do not complete this request, as it requires providing both the last four digits of their social security numbers and their account numbers, which people may not know offhand. After reviewing

Robust reporting and tracking on IVR feature performance can help utilities get a granular view of actual versus expected impact.

its call recordings, one utility realized that most inbound calls should not require authentication; for instance, reporting a downed wire need not require full authentication. Once the utility changed its criteria for full authentication, the containment rate for its IVR system went up by approximately 2 to 3 percent, resulting in an up to 5 percent reduction in call volume.

4. Address gaps in technical capability and system architecture

Once utilities have a plan for how to restructure their IVR system, they can align with their tech architect to build the technical design or blueprint. Tech architects should work alongside the business function to convert the functional design flow (call journeys, self-service options, and prompts) into a technical flow by adding relevant technical APIs and data-connection requirements.

Enabling the right data structure can be one of the biggest bottlenecks for utilities at this stage, as they often struggle to define exactly what data source(s) should communicate to the IVR system. Thus, we recommend tackling this step as soon as possible. Most important, these data sources should be consistent with those used at the back end of other self-service channels—such as a utility's website—to eliminate the possibility of conflicting information.

Once they define the technical design and data sources, utilities should evaluate the telephone and system architecture design to ensure it can handle increased call traffic. Solution architects, IT, and business stakeholders should all be a part of the evaluation.

One utility built outage reporting into its IVR system. To begin, the organization made some policy changes, educated customers on the new process and IVR functionality, and set up an automated phone-number identification module in its IVR system. These changes led to an almost 40 percent reduction in inbound calls related to reporting and outage updates.

5. Develop, test, and report

After the technical design is set, developers can begin building the new call flows or features, getting them ready to be tested and deployed. A/B testing is a great way for utilities to test slight variations of an IVR flow by, for instance, routing a subset of callers to different paths and seeing which one has better outcomes.

Developers should continuously test and monitor the performance of the new call flows, making changes as needed. Robust reporting and tracking on IVR feature performance can help utilities get a granular view of actual versus expected impact. Utilities can evaluate the success of these new flows by using identified performance indicators, such as containment rate, authentication rate, and reduction in call volume to customer-service reps by journey. In addition, an agile feedback-loop process—

whereby improvements and feedback are quickly communicated to developers—can help teams make iterative adjustments to features or capabilities ensuring they support the utility's overall vision (lower call-center costs, better containment rates, and so on).

This kind of feedback mechanism can also help continuously track IVR call-flow data, identifying drop-off and failure points to determine where to make improvements. In an account-change journey, for example, if most customers drop off at the prompt to provide their account numbers, then developers know they need to use another authentication method. Utilities don't always need to redesign their whole IVR; rather, they can focus just on high-impact areas.

One leading payments company created a robust machine-learning algorithm to track customer drop-off points in its IVR system and report the nodes[2] that customers struggled to use correctly. The business team used this data from this algorithm to continuously improve the customer journey, resulting in an evolving IVR system. Furthermore, the overall IVR design is more closely linked to customer needs, which supports a higher containment rate.

At its core, an IVR transformation necessitates taking a comprehensive view of the customer journey and creating a new, repeatable system. Achieving a best-in-class IVR system and reducing call-center costs requires utilities to reimagine how they approach system development and where they place their focus. In doing so, utilities can achieve an approximately 10 to 30 percent reduction in call volume and approximately a five- to ten-point improvement in customer satisfaction. Indeed, to become leaders in IVR, utilities must put the customer first.

[2] An IVR node can be created to facilitate complex tasks such as entering an account number or setting up a payment. Nodes can operate autonomously or interface with an external application server.

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